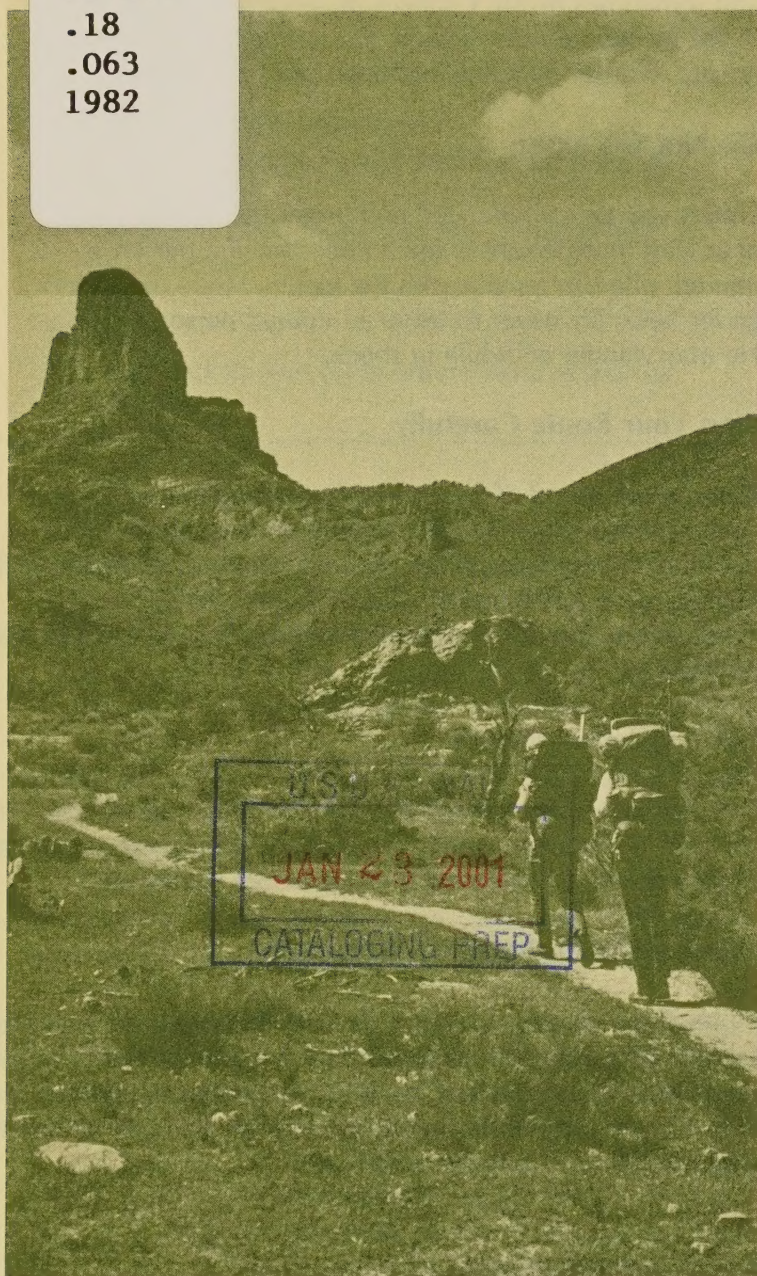


Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

On Your Own in Southwestern Mountains

Reserve
aGV200
.18
.063
1982



United States
Department of
Agriculture

PREPARED BY
Forest Service

Southwestern
Region
July 1982

Safety Tips for Outdoorsmen

Each year, more and more Americans load up their gear and head for the mountains. Those venturing into rugged Southwestern mountains find deserts, forests, and high alpine country overshadowed by snow-covered peaks. Here one may travel miles and see few signs of man. Above timberline, there is a whole new world of challenges for the most experienced outdoorsman.

Certain safety procedures should be followed by all visitors. Failure to observe safety rules leads to accidents and sometimes death. Chances of becoming a statistic in the records of some search and rescue team will be greatly reduced by following these safety rules.

Do Not Go Alone

Unless you are experienced and prefer solitude, a party of at least four persons is recommended. If a person is injured, one can remain with the victim, while the others go for help. Try never to leave an injured person alone. He may wander off while in shock.

Plan Your Route Carefully

Plan a route ahead of time using Geological Survey and Forest Service maps. When traveling on foot, allow about one hour for each two miles covered, plus an additional hour for each 1,000 feet of altitude gained. At all times, know where you are on the map and the best way out to civilization.

Get a Weather Report

Fast-moving frontal systems can bring sudden and violent changes in mountain weather, especially during winter. Always obtain an extended forecast before setting out.

Check With Authorities

Much of the mountain country lies within National Forests. Forest Rangers know their districts and can offer valuable advice on trails, campsites, and potential problems. Game and Fish Conservation Officers also will be glad to help.

Go Properly Equipped

As a rule, the most serious dangers are EXTREME HEAT, WIND, COLD, AND WETNESS. Even during July, it sometimes snows in high country, and hard summer rains occur almost daily through the mountain ranges. It is

quite possible to die from "exposure" (technically hypothermia) at any time of the year. Having proper clothing is very important. A shirt, sweater, socks, mittens, and cap (all of wool) should always be carried. Even when wet, wool is warm against the skin. For protection against wind and wetness, carry a weatherproof outer parka. Sun protection and adequate water are essential in desert areas.

Bright clothing is appropriate from a safety standpoint during the big game hunts. A booklet from the Departments of Game and Fish describes areas open to hunters and season dates. This is a useful publication for individuals wishing to avoid the hunting areas.

Always carry these items when going into the mountains: map—compass—flashlight—sunglasses—waterproof matches—whistle—pocket knife—candle—protective clothing—minimum first aid—extra food. Helmets are recommended for rock climbers.

Firewood is scarce almost everywhere. Use a fuel-powered stove to conserve wood. Water sources are almost all polluted. Be able to purify water you need. Water is scarce on the ridges. Carry plenty.

Heat Stress

Heat stress occurs when humidity, air temperature, radiant heat, and too little air movement combine with heavy work and clothing to raise the body temperature beyond safe limits. Sweat, as it evaporates, is the body's main line of defense against heat — as sweat evaporates it cools the body. In high humidity, sweating becomes more intense but doesn't evaporate, so no heat is lost. When water lost through sweating is not replaced, the body's heat controls break down and body temperature climbs dangerously, subjecting the body to heat stress.

Preventing Heat Stress

Maintaining a high level of physical fitness is one of the best ways to protect yourself. The physically fit person has a well-developed circulatory capacity, as well as increased blood volume — important in regulating body temperature.

The person acclimated to the heat runs less risk of heat stress. The body adjusts to hot work in 4 to 8 days by:

- Increasing sweat production.
- Improving blood distribution.
- Decreasing skin and body temperature.
- Decreasing heart rate (beats per minute for the same job may drop from 180 to 150).

Acclimatization may be hastened by taking 250 milligrams of vitamin C daily. About 1 1/2 hours of work a day in the heat is enough to acclimatize to a specific combination of work and heat. It provides partial acclimatization to more severe conditions. Adjust to hot weather activity gradually. Set a sensible pace, take frequent breaks, replace fluids, and don't expect full production for the first few days. Acclimatization persists for several weeks, but a tough weekend (fatigue, alcohol) leads to some loss.

Exposure/Hypothermia

Hypothermia may be a new word to you, but "exposure" probably isn't. Hypothermia is the rapid, progressive mental and physical collapse that accompanies the cooling of the inner core of the human body. It is caused by exposure to cold, is aggravated by wet, wind, and exhaustion, and is the primary killer of outdoor recreationists.

Prevention

- Take heed of "hypothermia weather": wet, cold, and windy. Don't challenge a storm unnecessarily.

- Don't drink alcohol: it dilates blood vessels which accelerates the body's heat loss.
- Dress properly to stay warm. Too much insulation causes sweating and too little accelerates heat loss. A warm cap and mittens are essential. Up to 25 percent heat loss can take place from an uncovered head.
- Be well-rested and properly nourished. Quick-energy foods should be taken along. Drink a lot of water to prevent dehydration.
- Be in good physical condition. Exercise is necessary to maintain body heat. Exhaustion prevents exercise and speeds hypothermia.

Symptoms

- Uncontrollable shivering.
- Poor coordination and loss of manual dexterity.
- Drowsiness.
- Disorientation, slurred speech, unawareness.
- Exhaustion.

Treatment

- Get back to your car or other shelter as soon as possible.

Recognizing and Treating Heat Stress Disorders

| Heat Stress Disorder | Cause | Symptoms | Treatment |
|-------------------------------|--|---|---|
| Heat cramps | Failure to replace salt lost in sweating. | Painful muscle cramps. | Drink lightly salted water or lemonade; tomato juice, or "athletic" drinks; stretch cramped muscle. |
| Heat exhaustion | Failure to replace water and salt lost in sweating. | Weakness, unstable gait, or extreme fatigue; wet, clammy skin; headache, nausea, collapse. | Rest in shade and drink lightly salted fluids. |
| Dehydration exhaustion | Failure to replace water losses over several days. | Weight loss and excessive fatigue. | Drink fluids and rest until body weight and water losses are restored. |
| Heat stroke | Total collapse of temperature regulating mechanisms. | Hot skin; high body temperature (106° F or higher); mental confusion, delirium, loss of consciousness, convulsions. | Rapidly cool victim immediately, either by immersing in cold water or soaking clothing with cold water and fanning vigorously to promote evaporative cooling. Continue until temperature drops below 102° F. Treat for shock if necessary once temperature lowered. Heat stroke is a medical emergency. Send for medical help and begin treatment at once. Brain damage and death result if treatment is delayed. |

- Get out of the wind.
- Get as dry as possible.
- Eat fast-energy foods such as dried fruit, granola bars, candy, nuts, etc.
- Drink warm fluids. Warm the body externally as rapidly as possible, but don't cause burns by extreme applications of heat.

Planning, prevention, and treatment are essential to your survival. Death soon results unless treatment is effected. An accident that causes physical injury and shock is exaggerated by low temperatures. Be extra careful to protect yourself from natural hazards as well as your errors of judgment.

Hypothermia is not just a winter or high mountain weather problem. It may affect you at higher mountain elevations in the summer, while hiking, jogging, playing, or working at or near your home in lower elevations. Don't underestimate the dangers of exposure/hypothermia.

Allow Time for Acclimatization

Persons coming into the mountains from low altitudes should beware of trying to climb high peaks until they have had a few days to acclimatize. Many people who go too high too fast suffer "mountain sickness." The symptoms are vomiting, diarrhea, and the feeling of being very ill. Pulmonary edema, a major medical emergency, also can occur above the 9,000 foot level. The symptoms include extreme fatigue or collapse, shortness of breath, a racking cough, bubbling noises in the chest, and bloody sputum. Unless transported to a much lower altitude immediately, the victim may die within a matter of hours. If available, administer oxygen.

The following chart lists the approximate length of time one should spend at various altitudes in order to become acclimatized:

| | |
|-------------|-----------------------|
| Day 1 | 0 ft.— 7,000 ft. |
| Day 2 | 7,000 ft.—10,000 ft. |
| Day 3 | 10,000 ft.—12,000 ft. |
| Day 4 | 12,000 ft.—14,000 ft. |

There are several other procedures which, if followed, may also help prevent the "mountain miseries:"

- Arrive in good physical condition.
- Get plenty of rest and sleep.
- Avoid alcohol and smoking.

Returning to sea level at the end of a high mountain expedition presents no adjustment problems.

Winter Mountaineering

There is a vast difference between hiking across high country in July and in January. Any cross-country trip during the winter should be considered an expedition. Snowshoes or skis with climbing skins are absolutely necessary. Any summit climb above timberline is likely to require crampons, climbing rope, ice axe, and snow goggles. Avalanches are a major danger in high peak areas. Check with Forest Service Rangers or local climbers for advice on hazardous areas before setting out. Each member of a winter expedition should have at least a full 24-hour supply of extra food. Be prepared for temperatures well below zero. Readings of -40° F are not unknown.

Leave Information with Relatives or Friends

A complete itinerary of your trip, along with the name and address of each member, description and license numbers of vehicles used, and expected time of return should be left with a reliable person. Once under way, stick to your planned route and schedule. Anytime a group is seriously overdue, the State Police, County Sheriff, or Forest Service should be called.

Learn the Limitations of Each Member

Assess the strengths and weaknesses of each member of the party. Do not try anything beyond the ability of the weakest person. Set the pace to that of the slowest person. Never be too proud to turn back in the face of overwhelming odds. Use judgment and return another day.

Keep the Party Together

Individual members of a group should not be allowed to fall behind the main party or go ahead of it. Many fatalities have resulted from disregarding this rule. If the group is large, select one person to set the pace, another to bring up the rear. If hiking in the dark for some reason, assign each person a number and count-off periodically.

Use Caution in Crossing Rivers

Most mountain streams are shallow and present few fording problems. However, when crossing any stream where there is the slightest chance of being carried away, always release the waist strap and one shoulder strap of your pack, so that it can be jettisoned if necessary. Flash floods occur in the steep, arid canyons and arroyos

around the perimeter of the mountains. Avoid camping in these hazardous areas or leaving vehicles parked there.

Beware of Loose Rock

In some areas loose rock can be a serious hazard. Keep your group bunched together when going up or down this type terrain. Never roll rocks down a mountainside. Another party may be below.

Get Off Exposed Ridges During Storms

Summer storms move fast and may be accompanied by rain, hail, high winds, low visibility, and lightning. Do not get caught on a peak or exposed ridge. If you are unable to get down in a lightning storm, stay away from lone trees or rocks. Avoid shallow caves or depressions. Ground currents may jump from the edge to your body. Insulate yourself from the ground if possible (pack, rope, clothing) and squat down, allowing only your two feet to touch the ground. Do not abandon your metal equipment. It may be needed later on.

Be Prepared for Emergencies

Most southwestern mountains are considered "walk-ups" from a technical standpoint during summer months. On long climbs or scrambles above timberline, the safe policy is to start for the summit at dawn and turn back about noon, before summer storms begin to form. A summit party should take along emergency gear in case someone is injured. A plastic tube tent, sleeping bag, extra food and water, small gas stove and cook pot, and first aid kit spread among the members will ensure the victim of an accident receiving necessary care until a rescue can be completed.

Emergency Signals

Some signals are considered standard by most search and rescue groups.

- Distress—3 evenly spaced signals given within 30 seconds. Repeat as required.
- Acknowledgment—2 signals given in quick succession.
- Return to Camp—4 evenly spaced signals given within 30 seconds. Repeat as required.



NATIONAL AGRICULTURAL LIBRARY



1022536392